

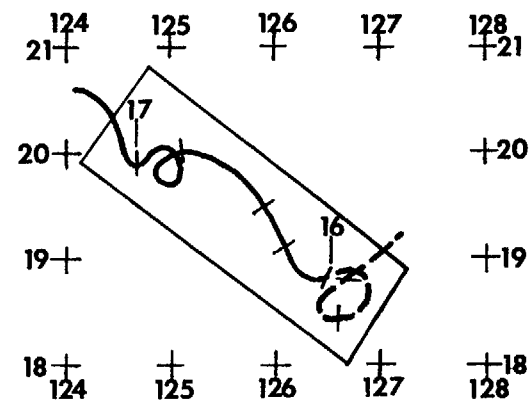
LEGEND

- 06 HOUR BEST TRACK POSIT
- A SPEED OF MOVEMENT
- B INTENSITY
- C POSITION AT XX/0000Z
- ... TROPICAL DISTURBANCE
- ... TROPICAL DEPRESSION
- TROPICAL STORM
- TYPHOON
- ◆ SUPER TYPHOON START
- ◇ SUPER TYPHOON END
- ◇◇ EXTRATROPICAL
- ... DISSIPATING STAGE
- ★ FIRST WARNING ISSUED
- ☆ LAST WARNING ISSUED

TYPHOON PERCY

BEST TRACK TC-19
14 SEP-19 SEP 1980
MAX SFC WIND 125 KTS
MINIMUM SLP 919 MBS

DTG	SPEED	INTENSITY
15/12Z	06	50
15/18Z	07	55
16/00Z	10	65
16/06Z	04	70
16/12Z	04	75
16/18Z	09	85
17/00Z	11	95
	10	



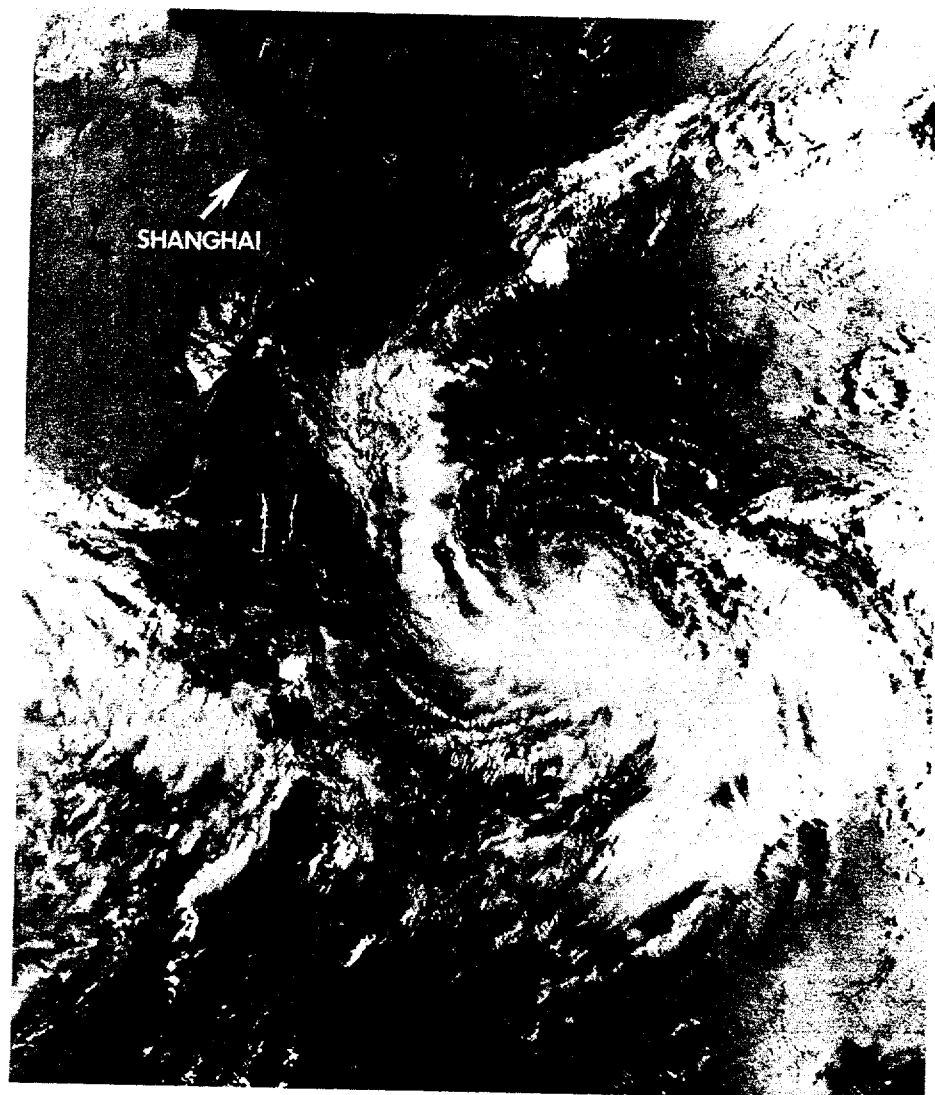


FIGURE 3-19-1. Tropical Storm Percy at 45 kt (23 m/sec) intensity, 14 September 1980, 2333z. Percy's low-level center at that time was partially exposed on the northeastern edge of a large convective area. (NOAA6 imagery)

The disturbance which eventually developed into the tenth typhoon of 1980 became evident on satellite imagery at 130600Z September 1980 as a focal point of cumulus banding. This development occurred at the base of a mid-tropospheric, mid-latitude trough that extended south of Japan along 133E. With further intensification likely, a Tropical Cyclone Formation Alert (TCFA) was issued by JTWC at 132157Z. An aircraft reconnaissance investigation soon afterwards found a well-developed closed circulation with 1500 ft (457m) flight level winds of 35 kt (16 m/sec) and a minimum sea-level pressure of 992 mb. Upon receipt of these data, the first warning on Tropical Storm Percy was issued at 140600Z.

By that time, the mid-tropospheric, mid-latitude trough had moved eastward, and Percy's track, in response, shifted from a northward to a more climatological west-northwestward track as the ridge extended eastward north of Percy. Percy's development was slow at this time as scatter between satellite and aircraft fixes indicated that he was poorly aligned in the vertical. Convection on satellite imagery was displaced southwest of Percy's surface center. The mid-tropospheric ridge that extended from eastern China along 28N to a position north of Okinawa also restricted upper-level outflow in Percy's northern semicircle. Between 15 and 17 July, however, reconnaissance aircraft consistently reported decreasing heights and increasing temperatures near the 700 mb center (Fig. 3-19-1).

During this time, Percy decelerated and began moving erratically. He eventually completed two tight cyclonic loops while intensifying to typhoon strength by 160000Z. Shortly afterward, at 160248Z, aircraft reconnaissance reported that the eyewall had become fully enclosed. JTWC forecast significant intensification for the next 36 hours as the Theta E (Θ_e) forecast intensity aid (see summary for Super Typhoon Kim) indicated an approaching intersection of the 700 mb equivalent potential temperature trace and the minimum sea-level pressure trace.

During Percy's period of erratic movement, there was speculation that a Fujiwhara interaction might develop between Percy and then Tropical Storm Sperry, which was located 800 nm (1575 km) to the east. A comparison of the post-analysis best tracks for Percy and Sperry shows that the two vortices were never close enough for an interaction to occur (Brand, 1968).

Interestingly, Percy did dominate much of the low-level circulation pattern between the two systems. A reconnaissance aircraft mission flown between Percy and Sperry indicated that the wind shift from southerly to northerly flow did not occur until about 100 nm (185 km) west of Sperry's surface center (Fig. 3-19-2).

Significant intensification did take place as Percy's eye gradually grew tighter and sea-level pressure continued to fall (Fig 3-19-3). An aircraft fix at 171306Z indicated a 700 mb height of 2387 m, which extrapolates to a sea-level pressure of 919 mb and supports maximum sustained surface winds of 125 kt (64 m/sec). Due to his proximity to Taiwan, however, Percy then began to slowly weaken. A subsequent reconnaissance aircraft at 171616Z reported a rise in the 700 mb level to 2407 m. Approximately 9 hours later, Typhoon Percy made landfall on the extreme southern tip of Taiwan.



FIGURE 3-19-2. Percy just prior to reaching typhoon strength during the period of erratic movement over the Philippine Sea, 15 September 1980, 2311Z. (NOAA6 infrared imagery)

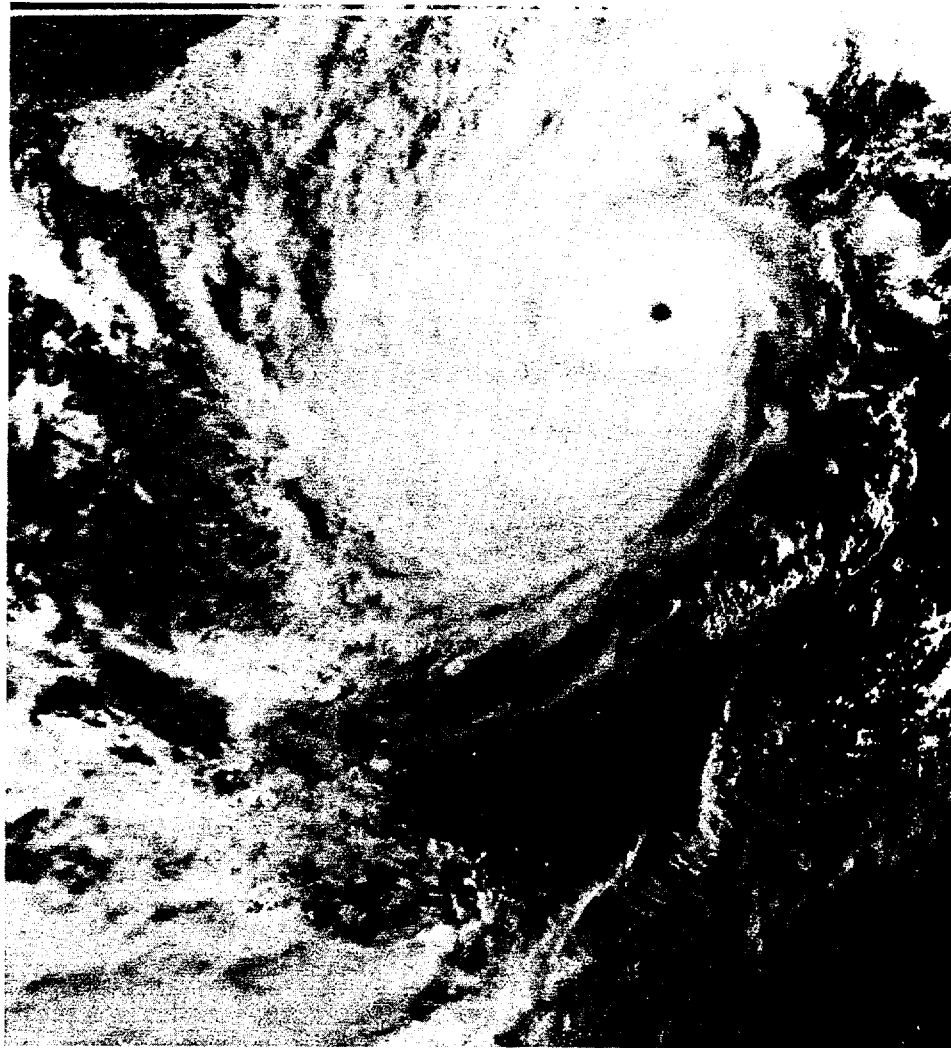


FIGURE 3-19-3. Typhoon Percy with 110 kt (57 m/sec) maximum surface winds while intensifying rapidly to near super typhoon strength, 17 September 1980, 0645Z. (Tiros N imagery)

The island of Taiwan so disrupted Percy's low-level inflow that he was never able to significantly re-intensify. Despite emerging over the Formosa Strait, Percy continued to weaken almost as quickly as he had intensified only a day earlier. By 182100Z he had made landfall on the coast of China about 240 nm (444 km) east of Canton, with estimated maximum sustained surface winds of 45 kt (23 m/sec). Percy continued to track inland and dissipated several hours later over the mountains of Mainland China.

Newspaper accounts of Typhoon Percy's landfall over southern Taiwan indicated 7 dead and 16 injured. Heavy rain accompanying Percy damaged 140 homes, flooded rice fields, and destroyed banana crops.